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OVERHEAD PROGRAM SOFTWARE

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OVERHEAD PROGRAM SOFTWARE

by

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ABSTRACT

In this report the program "OVERHEAD", created to assist in the creation of overheads for the Laboratory, is described. The program is executable on a VT-240 or a VT-100 terminal. A graphic display of the overhead is drawn when a VT-240 is used.

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PROGRAMME OVERHEAD

par

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RÉSUMÉ

Dans le présent rapport, on décrit le programme "OVERHEAD" créé pour faciliter la création de transparents pour le laboratoire. Le programme peut être exécuté sur un terminal VT-240 ou VT-100. Un affichage graphique du transparent est produit lorsqu'on utilise un VT-240.

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INTRODUCTION

A program was written by the staff of Surface Mining Laboratory to prepare overheads for presentations at conferences or for in-house and external debriefings.

The program consist of several subroutines for creating text and graphic plotting on transparencies using Calcomp or HP plotters. The program provide on-screen easy instruction and step-by-step guidance for the user.

OVERHEAD PROGRAM

The program may be executed on a VT-240 or a VT-100 terminal. A graphic display of the overhead is only drawn when a VT-240 terminal is used.

The program allows for insertion of lines of text in varying sizes and line spacing. The sizes of the characters are provided in <cm>. The line spacing is calculated from the inputting line spacing multiplier and the character size. For example, if the line spacing multiplier is equal to 1.5 and the text size is 1.0 cm, the space between two lines would be 0.5 cm. A line spacing multiplier of 1.0 would leave no space and place text directly below the previous line.

How to Use Program.

The program is executed by the command:

RUN OVERHEAD <CR>

The user is then prompted to identify their terminal. It should be answered "Y" if VT-240 terminal is used. The next step will be to input the name of the file to be created. When the MENU appears, input the number of the activity you wish to execute. In the case of INSERT, input the number of the line you wish to insert after. For example, if the user wants to insert after line 3, key 3 must be press in INSERT mode.

In the case of DELETE, the line number to be deleted must be entered.

In case of CHANGE, the number of lines that may be changed is inputed and the information of the lines are then retyped. The line's present parameters will be displayed when are in CHANGE mode. If no change need to be made, simply the present parameters are retyped. The text does not to be retyped, if no changes are introduced.

A key 4 is entered for plotting the overhead.

The margins of the text could also be modified by typing SET MARGINS. The upper lefthand corner of the overhead can be reset in order to center it on the paper.

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Fig.1: Overhead Example

A key 6 is allocated for the SAVE and QUIT options. The user may then save the overhead or delete all changes made since previous SAVE execution.

The following TABS are also used in the execution of the program:

A '^' denotes a TAB.
Each TAB '^' moves text 1 cm to the right.
TABS may only be found at the start of a line of text.
The '^' character will not be plotted.

The example of simple text is in Figure 1.

Program Listing.

The program OVERHFAD listing in FORTRAN 77 is as follows:

```
      PROGRAM OVERHEAD

C     LINK OVERHEAD+GRAPHICS

      REAL SIZE(50),LSP(50),SM,TM,XLEN,YLEN,X(50),Y(50)
      INTEGER NLIN,NFNAME
      CHARACTER TEXT(50)*80,FNAME*20,CEN(50)*1,PROMPT*1,ESC*1
      LOGICAL EX,VT240

C     XLEN,YLEN      = PAGE DIMENSIONS (cm)
C     SM,TM          = SIDE AND TOP MARGINS (cm)
C     SIZE           = CHARACTER PLOT SIZE (cm)
C     LSP            = LINE SPACING MULTIPLIER
C     TEXT           = LINE TEXT
C     CEN            = CENTERING VARIABLE
C     X,Y            = LOWER LEFT COORDINATE OF FIRST TEXT CHARACTER
C                      IN EACH LINE
C     VT240          = FLAG INDICATING TYPE OF TERMINAL
C     NLIN           = NUMBER OF LINES OF TEXT
C     FNAME          = FILE NAME
C     NFNAME         = NUMBER OF CHARACTERS IN FILE NAME
C     PROMPT         = INPUT VARIABLE
C     ESC            = ESCAPE CHARACTER FOR REGIS COMMANDS
C     EX             = FLAG INDICATING FILE EXISTANCE

      VT240=.FALSE.
      ESC=CHAR(27)
      XLEN=28.0
      YLEN=21.5
      SM=2.
      TM=2.
      WRITE(*,*) 'ARE YOU AT A VT240 (Y/N)?'
      READ(*,'(A1)') PROMPT
      IF(PROMPT.EQ.'Y'.OR.PROMPT.EQ.'y') VT240=.TRUE.

      WRITE(*,*) 'ENTER FILENAME OF OVERHEAD'
      READ(*,'(A20)') FNAME
      CALL CHARCOUNT(FNAME,20,NFNAME)
      FNAME(1:NFNAME+4)=FNAME(1:NFNAME)//'.OHD'
      INQUIRE(FILE=FNAME,EXIST=EX)
```

```
      NLIN=0
      IF(EX) THEN
             NLIN=1
             OPEN(UNIT=1,FILE=FNAME,STATUS='OLD')
             READ(1,*) TM,SM
10           READ(1,20,END=30) CEN(NLIN),SIZE(NLIN),LSP(NLIN),TEXT(NLIN)
20           FORMAT(1X,A1,F5.2,F5.2,1X,A80)
             NLIN=NLIN+1
             GO TO 10
30           NLIN=NLIN-1
             CLOSE(UNIT=1)
      ELSE
             CALL SMARG(TM,SM)
      ENDIF
      IF(VT240) THEN
        WRITE(*,*) ESC,'[23;24r'
        WRITE(*,*) ESC,'P1p'
        WRITE(*,*) 'S(A[0,479][799,0])(E)'
        WRITE(*,*) ESC,'\'
        DO 5 I=1,20
             WRITE(*,*) ESC,'[B'
5       CONTINUE
      ENDIF

50    IF(VT240) THEN
         CALL REFRESH(CEN,SIZE,LSP,TEXT,NLIN,XLEN,YLEN,SM,TM,X,Y)
      ELSE
        WRITE(*,*) 'MENU'
        WRITE(*,*) '(1) INSERT LINE'
        WRITE(*,*) '(2) DELETE LINE'
        WRITE(*,*) '(3) CHANGE LINE'
        WRITE(*,*) '(4) PLOT OVERHEAD'
        WRITE(*,*) '(5) CHANGE MARGINS'
        WRITE(*,*) '(6) QUIT'
      ENDIF

      WRITE(*,*) 'ENTER CHOICE:'
      READ(*,'(I1)') NUM
      IF(NUM.EQ.1) CALL INSERT(CEN,SIZE,LSP,TEXT,NLIN)
      IF(NUM.EQ.2) CALL DELETE(CEN,SIZE,LSP,TEXT,NLIN)
      IF(NUM.EQ.3) CALL CHANGE(CEN,SIZE,LSP,TEXT,NLIN)
      IF(NUM.EQ.4) THEN
        IF(VT240) THEN
             CALL HPLOT(X,Y,SIZE,TEXT,NLIN)
        ELSE
             WRITE(*,*)'ARE YOU CONNECTED TO CALCOMP PLOTTER (Y/N)?'
             READ(*,'(A1)') PROMPT
             IF(PROMPT.EQ.'Y'.OR.PROMPT.EQ.'y')
3            CALL CPLOT(CEN,SIZE,LSP,TEXT,NLIN,XLEN,YLEN,SM,TM)
        ENDIF
      ENDIF
      IF(NUM.EQ.5) CALL SMARG(TM,SM)
      IF(NUM.EQ.6) GO TO 999
      GO TO 50

999   WRITE(*,*) 'DO YOU WANT TO SAVE OVERHEAD (Y/N)?'
      READ(*,'(A1)') PROMPT
      IF(PROMPT.NE.'N'.AND.PROMPT.NE.'n') THEN
             OPEN(UNIT=1,FILE=FNAME,STATUS='NEW')
             WRITE(1,*) TM,SM
             DO 1000 I=1,NLIN
                    WRITE(1,20) CEN(I),SIZE(I),LSP(I),TEXT(I)
1000         CONTINUE
```

```
            CLOSE(UNIT=1)
        ENDIF
        WRITE(*,*) ESC,'[1;24r'

        END

*************************

        SUBROUTINE CHARCOUNT(TEXT,LEN,NCHAR)

C       COUNTS NO. OF CHARACTERS IN TEXT LINE

        INTEGER LEN,NCHAR
        CHARACTER*(*) TEXT

        DO 10 I=1,LEN
            IF(TEXT(I:I).NE.' ') NCHAR=I
10      CONTINUE
        RETURN
        END

*************************

        SUBROUTINE INSERT(CEN,SIZE,LSP,TEXT,NLIN)

C       INSERT LINES OF TEXT INCLUDING PARAMETERS OF LINES

        REAL SIZE(50),LSP(50)
        INTEGER NLIN,LN
        CHARACTER TEXT(50)*80,CEN(50)*1,PROMPT*1

        IF(NLIN.GT.0) THEN
            WRITE(*,10) NLIN
10          FORMAT(' INSERT AFTER WHICH LINE (0-',I2,')?')
            READ(*,*) LN
        ELSE
            LN=0
        ENDIF

15      IF(LN.LT.NLIN) THEN
            LN=LN+1
            DO 20 I=NLIN,LN,-1
                CEN(I+1)=CEN(I)
                SIZE(I+1)=SIZE(I)
                LSP(I+1)=LSP(I)
                TEXT(I+1)=TEXT(I)
20          CONTINUE
        ELSE
            LN=NLIN+1
        ENDIF

        NLIN=NLIN+1
        WRITE(*,*) 'IS THE LINE CENTERED (Y/N)?'
        READ(*,'(A1)') CEN(LN)
        WRITE(*,*) 'WHAT IS THE CHARACTER SIZE OF THE LINE (X.XX cm)?'
        READ(*,*) SIZE(LN)
        WRITE(*,*) 'WHAT IS THE LINE SPACING OF THE LINE (X.XX)?'
        READ(*,*) LSP(LN)
        WRITE(*,*) 'ENTER LINE OF TEXT?'
        READ(*,'(A80)') TEXT(LN)
        WRITE(*,*) 'ANY MORE LINES AFTER THIS (Y/N)?'
        READ(*,'(A1)') PROMPT
```

```
      IF(PROMPT.EQ.'Y'.OR.PROMPT.EQ.'y') GO TO 15
      RETURN
      END

*****************************

      SUBROUTINE DELETE(CEN,SIZE,LSP,TEXT,NLIN)

C     REMOVE EXISTING LINES OF TEXT

      REAL SIZE(50),LSP(50)
      INTEGER NLIN,LN
      CHARACTER TEXT(50)*80,CEN(50)*1,PROMPT*1

      WRITE(*,10) NLIN
10    FORMAT(' WHICH LINE TO DELETE (1-',I2,')?')
      READ(*,*) LN

      IF(LN.GT.NLIN.OR.LN.LT.1) THEN
            WRITE(*,*) ' OUT OF RANGE'
            RETURN
      ENDIF
      NLIN=NLIN-1
      DO 20 I=LN,NLIN
            CEN(I)=CEN(I+1)
            SIZE(I)=SIZE(I+1)
            LSP(I)=LSP(I+1)
            TEXT(I)=TEXT(I+1)
20    CONTINUE
      RETURN
      END

*******************************
      SUBROUTINE CHANGE(CEN,SIZE,LSP,TEXT,NLIN)

C     CHANGE EXISTING LINES OF TEXT OR PARAMETERS OF LINES

      REAL SIZE(50),LSP(50)
      INTEGER NLIN,LN
      CHARACTER TEXT(50)*80,CEN(50)*1,PROMPT*1

      WRITE(*,10) NLIN
10    FORMAT(' ENTER LINE NUMBER TO CHANGE (1-',I2,')?')
      READ(*,*) LN

      IF(LN.GT.NLIN.OR.LN.LT.1) THEN
            WRITE(*,*) ' OUT OF RANGE'
            RETURN
      ENDIF

      WRITE(*,20) CEN(LN)
20    FORMAT(' LINE TO BE CENTERED (Y/N)? : CURRENTLY AT "',A1,'"')
      READ(*,'(A1)') CEN(LN)
      WRITE(*,30) SIZE(LN)
30    FORMAT(' LINE SIZE (X.XX cm)? : CURRENTLY AT "',F4.2,'"')
      READ(*,*) SIZE(LN)
      WRITE(*,40) LSP(LN)
40    FORMAT(' LINE SPACING (X.XX)? : CURRENTLY AT "',F4.2,'"')
      READ(*,*) LSP(LN)
      WRITE(*,50) TEXT(LN)
50    FORMAT(1X,A80)
      WRITE(*,*) ' CHANGE THIS TEXT (Y/N)?'
      READ(*,'(A1)') PROMPT
```

```
      IF(PROMPT.EQ.'Y'.OR.PROMPT.EQ.'y') THEN
              WRITE(*,50) TEXT(LN)
              READ(*,'(A80)') TEXT(LN)
      ENDIF
      RETURN
      END

**********

      SUBROUTINE REFRESH(CEN,SIZE,LSP,TEXT,NLIN,XLEN,YLEN,SM,TM,X,Y)

C     DRAW SCREEN IN REGIS MODE ON VT240 (OVERHEAD AND MENU)

      REAL SIZE(50),LSP(50),XLEN,YLEN,SM,TM,X(50),Y(50),XCEN
      INTEGER NLIN,NCHAR
      CHARACTER TEXT(50)*80,CEN(50)*1,PROMPT*1,ESC*1

      ESC=CHAR(27)

      XCEN=XLEN*10.
      YPOS=YLEN*20.-TM*20.+49
      WRITE(*,*) ESC,'P1p'
      WRITE(*,*) 'S(E)'
      WRITE(*,*) 'P[0,479]V[+560][,-430][-560][,+430]'
      WRITE(*,*) 'P[',SM*20.,',',479-TM*20.,']V[+',560-SM*40,']'
      WRITE(*,*) '[,-',430-TM*40.,'][-',560-SM*40.,'][,+',430-TM*40.,']'
      WRITE(*,*) 'T[9,]'
      WRITE(*,*) 'T(S[8,20])'
      WRITE(*,*) 'T(U[9,20])'
      WRITE(*,*) 'P[580,400]T"MENU"P[580,381]V[+40]'
      WRITE(*,*) 'P[570,320]T"(1) INSERT LINE"'
      WRITE(*,*) 'P[570,280]T"(2) DELETE LINE"'
      WRITE(*,*) 'P[570,240]T"(3) CHANGE LINE"'
      WRITE(*,*) 'P[570,200]T"(4) PLOT OVERHEAD"'
      WRITE(*,*) 'P[570,160]T"(5) CHANGE MARGINS"'
      WRITE(*,*) 'P[570,120]T"(6) QUIT"'
      IF(NLIN.LT.1) GO TO 999
      DO 100 I=1,NLIN
              TAB=1
              CALL CHARCOUNT(TEXT(I),80,NCHAR)
              IF(CEN(I).EQ.'Y'.OR.CEN(I).EQ.'y') THEN
                      X(I)=XCEN-(NCHAR/2.*SIZE(I)*20.)
              ELSE
                      DO 50 J=1,NCHAR
                         IF(TEXT(I)(J:J).EQ.'^') THEN
                              TAB=J+1
                         ELSE
                              GO TO 60
                         ENDIF
50                    CONTINUE
60                    X(I)=SM*20.+(TAB-1)*20.
              ENDIF
              Y(I)=YPOS
              YPOS=YPOS-SIZE(I)*LSP(I)*20.
              WRITE(*,*) 'T[',SIZE(I)*20.,',0]'
       WRITE(*,*) 'T(S[',20.*SIZE(I),',',20.*SIZE(I),'])'
       WRITE(*,*) 'T(U[',20.*SIZE(I),',',20.*SIZE(I),'])'
              WRITE(*,*) 'P[',X(I),',',Y(I),']'
              WRITE(*,*) 'T"',TEXT(I)(TAB:NCHAR),'"'
              Y(I)=Y(I)-SIZE(I)*20.
100   CONTINUE
999   WRITE(*,*) ESC,'\'
      RETURN
      END
```

```
**************************

      SUBROUTINE CPLOT(CEN,SIZE,LSP,TEXT,NLIN,XLEN,YLEN,SM,TM)

C     CALCOMP PLOTTER SUBROUTINE

      REAL SIZE(50),LSP(50),XLEN,YLEN,SM,TM,XPOS,YPOS,XCEN
      INTEGER NLIN,NCHAR,TAB
      CHARACTER TEXT(50)*80,CEN(50)*1,PROMPT*1

      XCEN=XLEN/2.
      YPOS=YLEN-TM

      CALL PLOTS(0,0,6)

      DO 100 I=1,NLIN
            TAB=1
            CALL CHARCOUNT(TEXT(I),80,NCHAR)
            IF(CEN(I).EQ.'Y'.OR.CEN(I).EQ.'y') THEN
                  XPOS=XCEN-(NCHAR/2.*SIZE(I))
            ELSE
                  DO 50 J=1,NCHAR
                     IF(TEXT(I)(J:J).EQ.'^') THEN
                          TAB=J+1
                     ELSE
                          GO TO 60
                     ENDIF
50                   CONTINUE
60                   XPOS=SM+TAB-1
            ENDIF
      YPOS=YPOS-SIZE(I)
      CALL SYMBOL(XPOS,YPOS,SIZE(I),TEXT(I)(TAB:NCHAR),14,0.,
      3       (NCHAR-TAB+1))
      YPOS=YPOS-SIZE(I)*(LSP(I)-1.)
100   CONTINUE
      CALL PLOT(0.,0.,999)

      RETURN
      END

**********************************

      SUBROUTINE HPLOT(X,Y,SIZE,TEXT,NLIN)

      INTEGER N,I,J,LUN,NLIN,NC,TAB
      REAL X(50),Y(50),SIZE(50)
      CHARACTER*11 OUTFILE,TEXT(50)*80
      CHARACTER*1 ESC,EXIT
      INTEGER*4 SS,LIB$SPAWN,SYS$WAITFR
      OUTFILE = 'PLOTTER.LIS'
      ESC=CHAR(27)
      EXIT=CHAR(3)
      LUN=6
      CALL ASSIGN (6,OUTFILE)
      WRITE(6,*) ESC//'.T3286;9470;;0:'
      WRITE(6,*) ESC//'.L'
      WRITE(6,*) ESC//'.@3286:'
      WRITE(6,*) 'IN;SP1;PA1500,2500;'
      DO 100 I=1,NLIN
       CALL CHARCOUNT(TEXT(I),80,NC)
       TAB=1
       DO 50 J=1,NC
        IF(TEXT(I)(J:J).EQ.'^') TAB=J+1
```

```
50        CONTINUE
          WRITE(6,*) 'PA ',X(I)*20.-80.,',',(Y(I)-49.)*20.-320.,';'
          WRITE(6,*)  'SI',SIZE(I)/1.5,',',SIZE(I),';LB',
         3       TEXT(I)(TAB:NC),EXIT
100      CONTINUE
         WRITE(6,*) 'FP;EP;SP0;PG1;'
         CALL CLOSE(6)
         SS = LIB$SPAWN ( 'PRINT/DEV=$PLOTTER plotter.LIS',,,,,,,%REF(3),,,,
         SS = SYS$WAITFR(%VAL(3))

         RETURN
         END

*************************

         SUBROUTINE SMARG(TM,SM)

C        SET MARGINS FOR PAGE

         REAL TM,SM

         WRITE(*,10) TM
10       FORMAT(' ENTER TOP MARGIN (X.XX cm)? : CURRENTLY ',F5.2)
         READ(*,*) TM
         WRITE(*,20) SM
20       FORMAT(' ENTER LEFT MARGIN (X.XX cm)? : CURRENTLY ',F5.2)
         READ(*,*) SM
         RETURN
         END
```

CONCLUSION

A simple program written in VAX FORTRAN 77 is introduced to provide the User with the tool to create its own overheads for presentation. Only text overheads may be created by using this program.

The example of the overhead is given, listing of the executable program is also presented.